

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CHARTER COMMUNICATIONS, INC. AND PLUME DESIGN, INC.
Petitioner

v.

ADAPTIVE SPECTRUM AND SIGNAL ALIGNMENT, INC.
Patent Owner

Case IPR2025-00088
Patent 11,050,654

**PATENT OWNER'S PRELIMINARY RESPONSE
UNDER 37 C.F.R. § 42.107(a)**

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PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	First Amended Docket Control [40], Adaptive Spectrum and Signal Alignment, Inc. v. Charter Communications, Inc. et al., Case No. 2:24-cv-00124 (E.D. Tex.) filed October 4, 2024
2002	Defendant's Invalidity Contentions and Subject Matter Eligibility Contention, Adaptive Spectrum and Signal Alignment, Inc. v. Charter Communications, Inc., et al., Case No. 2:24-cv-00124, (E.D. Tex.) November 1, 2024
2003	U.S. Patent No. 8,069,231 to Schran et al.
2004	C.A. Patent No. 2,531,681 to Werner et al.

I. Introduction

U.S. Patent No. 11,050,654 ('654 patent) provides novel and non-obvious claims drawn to innovative approaches to improve local area network (LAN) and wide area network (WAN) performance. Specifically, the '654 patent inventors recognized – more than a decade ago – a need for a system that could collect wide area network (WAN) performance information from the local area network (LAN) side of the customer interface. However, at that time service providers were generally unable to access the LAN side of their customer's networks. The '654 patent inventors overcame this obstacle through a number of inventive concepts, including collecting WAN and/or LAN performance information through a downloadable agent (DA) executed on communication devices and efficiently centralizing the collected information across devices for more informed analysis.

The Petition should be denied. Despite waiting eight months to file the Petition after being put on notice of Patent Owner's infringement positions in the parallel litigation, the Petitioner appears to have hastily assembled the Petition, failing *to even argue* that Ramos qualifies as prior art and that a person of ordinary skill in the arts (POSA) would have been motivated to combine certain of the prior art references. That is, this is not a case where Petitioner's arguments addressing these issues are unpersuasive, Petitioner simply did not make any arguments. Furthermore, the Petitioner fails to demonstrate that the prior art – even assuming

it could be combined or that Ramos is prior art – discloses at least two key elements of the challenged claims.

But even before considering these fatal flaws, the Board should use its discretion to deny the Petition under *Fintiv*. Most notably, trial in the parallel litigation is scheduled to begin nearly **nine** months before the projected FWD deadline. Moreover, five of the six *Fintiv* factors either favor or strongly favor denial of the Petition (and the sixth is neutral).

Turning back to the merits, the numerous substantive defects in the Petition relate not to ancillary aspects, but to the core features of the innovative systems claimed in the '654 patent. Indeed, Grounds 1 and 2 in the Petition (which both rely on a three reference combination) fail to teach or suggest the claimed “*transmitting,*” “*stor[ing],*” and “*analyz[ing] [of] the WAN performance information.*”¹ Additionally, Grounds 1-4 (relying on three and four reference combinations) all similarly fail to teach or suggest the claimed “*the server [being] operable to receive an on-demand change request associated with at least one of: throughput, or latency.*” These features (and others) of the '654 patent are key

¹ For ease of reference, Patent Owner will identify claim language from the '654 patent using *italics*, and will identify language quoted from other exhibits using regular font.

features that distinguish the claimed invention and enable it to overcome the deficiencies of the prior art. See EX1001, 1:28-39 (discussing the problems with existing systems, including that “[network] performance information is not centrally analyzed,” and thus “communication devices coupled to such networks may operate with lower performance”), 2:25-30. Indeed, these claimed features help “allow[] collection of information on all devices [in a network] centrally for a comprehensive analysis.” *Id.*, 2:30-28. Petitioner’s failure to adequately address these claim features in Ground 1-4 are fatal to the Petition.

For at least these reasons, Petitioner has not met—and cannot meet—its burden to show a reasonable likelihood that any of the challenged claims are unpatentable. Accordingly, the Board should deny institution of the Petition.

II. The Board Should Exercise Its Discretion to Deny Institution

The Board should deny the Petition under the *Fintiv* factors. In *Apple Inc. v. Fintiv, Inc.*, the Board articulated six nonexclusive factors for determining whether to institute an AIA post-grant proceeding where there is parallel district-court litigation. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (P.T.A.B. Mar. 20, 2020) (“*Fintiv*”). Here, the Board should exercise its discretion to deny the Petition because (1) *Fintiv* factors two through five support discretionary denial; and (2) the Petition does not provide a compelling, meritorious challenge (*Fintiv* factor six).

A. Factor 1 is neutral as no stay has been requested

No stay has been requested in the parallel litigation, and there is no indication that the court would grant such a request in the event this proceeding were instituted. Pet., 6. Factor one, therefore, is neutral. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 12 (P.T.A.B. May 13, 2020) (“*Fintiv II*”) (in similar circumstances finding that “[t]his factor does not weigh for or against discretionary denial”).

B. Factor 2 strongly favors denial because trial will begin nearly nine months before the FWD deadline

Factor two weighs heavily in favor of discretionary denial. The projected statutory deadline for issuing a Final Written Decision (FWD) in this IPR is June 16, 2026. Jury selection in the parallel litigation is scheduled to begin September 22, 2025, which is nearly nine months before the projected FWD deadline. EX2001, 1. According to the latest report (September 2024) on the uscourts.gov website, the median time-to-trial for civil actions in the Eastern District of Texas is 21.9 months. The complaint in the parallel litigation was filed February 21, 2024. Applying the median time-to-trial, the estimated trial date would be in mid-December 2025 (about December 18, 2025), which is about six months before the projected FWD deadline.

Additionally, citing a Lex Machina report, Petitioner alleges that “the Eastern District of Texas’ median time-to-trial for patent cases is 727 days, which

would result in a trial date of February 17, 2026.” Pet., 6 (*citing* EX1018). Even applying this date, which is most favorable to Petitioner, the trial in the parallel litigation would begin almost four months before the projected FWD deadline. The table below summarizes the various projections and demonstrates that, regardless of the source of the projection, the Board should reach a final decision in this IPR between about four to nine months **after** jury trial in the parallel litigation:

Eastern District of Texas	Projected Trial Date	Months Before FWD
Current Case Schedule	September 22, 2025	Nearly nine
US Courts (Civil)	Mid-December 2025	About six
Lex Machina (Patents)	February 17, 2026	Nearly four

Petitioner identifies that Charter has filed a “motion to transfer the co-pending litigation to the District of Colorado,” and the motion is pending. Pet., 6. Petitioner alleges that, if transferred, the expected trial date would be March 22, 2027. *Id.* Like a motion for stay, a judge determines whether to grant a motion to transfer “based on the facts of each specific case as presented in the briefs by the parties.” *See Fintiv II* at 12. The Board should not speculate on how a court will rule on a pending motion to transfer. *See id.* Under the current facts, trial in EDTX is scheduled to begin nearly nine months before the FWD deadline, and thus Factor two weighs heavily in favor of denying institution.

C. Factor 3 strongly favors denial because the parties and the district court already have and will continue to make significant investment in the parallel litigation

Factor three weighs in favor of denying institution. Here, the Board “consider[s] the amount and type of work already completed in the parallel litigation by the court and the parties *at the time of the institution decision.*” *Fintiv*, 9 (emphasis added). The deadline for issuing a Decision on Institution (DI) in this IPR is June 16, 2025. The parties have already exchanged invalidity and infringement contentions as well as claim construction positions and are engaged in the closing month of fact discovery. By the June 16, 2025 DI deadline, the court will have conducted a Claim Construction Hearing (on March 19, 2025), and the parties will have completed both fact discovery (by April 15, 2025) and expert discovery (by June 10, 2025). EX2001, 4-7.

Petitioner’s arguments that factor three favors institution are not persuasive because they consider the state of the parallel litigation at the time the Petition was filed, not at the time of the DI. *See* Pet., 7 (arguing that the case “is in its early stages” without considering the then-current case schedule (Dkt. 20 issued July 22,

2024), which Petitioner filed as Exhibit 1017²). Nor was Petitioner diligent in filing the Petition, as it alleges. *See* Pet., 7. Petitioner makes no mention of the fact that it waited over eight months after the district court complaint in the parallel litigation was filed to file the instant Petition. *Cf. Fintiv* at 11 (“If the evidence shows that the petitioner filed the petition expeditiously, such as promptly after becoming aware of the claims being asserted, this fact has weighed against exercising the authority to deny institution under *NHK*.”).

While the Petition challenges claims 1-6, 8-12, 16, 18-22, 30, 33-34, and 36 of the ’654 patent, there are only two independent claims, which share many of the same limitations, and there is significant overlap in the dependent claims. Taking more than eight months to challenge two substantially similar independent claims and their overlapping dependent claims is not diligent. Petitioner does not provide any explanation for its delay in filing the Petition (for there is none).

Because the parties and the court will have expended significant resources by the June 16, 2025 DI deadline and because Petitioner was not diligent in filing the Petition, factor three weighs strongly in favor of denying institution.

² The current schedule, issued October 4, 2024, and filed as Exhibit 2001, shows that only minor updates have been made to the schedule since the July 22, 2024 schedule (EX1017).

D. Factor 4 strongly favors denial because there is complete overlap between the issues that will be tried in the different tribunals

Factor four weighs in favor of denying institution. *Fintiv* factor four looks at the overlap between the issues raised in the IPR petition and in the parallel proceeding in order to evaluate concerns of inefficiency and the possibility of conflicting decisions. *Fintiv*, 12. Here, there is complete overlap between the invalidity issues: the Petition challenges the validity of claims 1-6, 8-12, 16, 18-22, 30, 33-34, and 36 of the '654 patent based on (i) Phuah, TR-069, and Huang; (ii) Ramos, Werner, and Schran; and (iii) Ramos, Werner, Schran, and Huang (Pet., 3); and in the parallel litigation, Petitioner challenges the validity of the same claims using the same six references. EX2002.

Petitioner's stipulation—to “not pursue the invalidity references relied on in the Grounds of this Petition in the ASSIA litigation” (*see* Pet., 8)—is not a *Sotera* stipulation and does not allay the concerns undergirding factor four. In fact, Petitioner's stipulation is essentially meaningless. It covers only six specific references, multiple of which have at least one counterpart or related patent/publication that is not included in the stipulation. For example, Schran is related to at least one other application that was published (as U.S. Patent No. 8,069,231) prior to the priority date of the '654 patent. *See* EX2003. Similarly, Werner is also related to at least one other application that was published (as CA2531681) prior to the priority date of the '654 patent. *See* EX2004. But even if

Petitioner stipulated not to use these related references, that still does not prevent Petitioner from using other references that have cumulative teachings.

Accordingly, because there is complete overlap in validity issues and Petitioner's stipulation does nothing to reduce this overlap, factor four weighs in favor of denying institution.

E. Factor 5 strongly favors denial because the parties involved in this IPR and the district court proceeding overlap

Factor five weighs in favor of denying institution because, as Petitioner acknowledges, "Charter is the defendant in the ASSIA Litigation." Pet., 8; *Fintiv II*, 15 ("Because the petitioner and the defendant in the parallel proceeding are the same party, this factor weighs in favor of discretionary denial."). While additional Petitioner, Plume, is not a party in the ASSIA litigation, they are nonetheless involved that litigation. Indeed, Patent Owner has served third party subpoenas on Plume for information highly relevant to infringement, and Plume is obligated to indemnify Charter against the infringement accused in the parallel litigation. Moreover, inclusion of Plume as a party to the instant Petition does nothing to mitigate concerns relating to Charter being involved in both proceedings.

F. Factor 6 strongly favors denial because the Petition fails to demonstrate that one or more of the claims are unpatentable

As explained herein, the Petition fails to establish that the applied references are unpatentable at least because: (i) the various combinations of references set

forth in Grounds 1-4 fail to teach or suggest multiple limitations of the challenged claims (*see* Sections VIII and IX); (ii) Petitioner has not shown that Ramos, as applied in Grounds 3 and 4, qualifies as prior art (*see* Section III); and (iii) Petitioner has failed to establish a *prima facie* case of obviousness for the combinations of references presented in Grounds 1-4 (*see* Section IV). Therefore, factor six favors denying institution. *Fintiv*, 15.

* * *

At bottom, five of the *Fintiv* factors either favor or strongly favor denial, and the sixth is neutral. As such, the Board should exercise its discretion to deny the Petition in view of the parallel litigation.

III. Petitioner Has Not Shown that Ramos is Prior Art.

Grounds 3 and 4, which both rely on Ramos, should be denied because Petitioner barely argues, if at all and fails to show that Ramos qualifies as prior art.

Inter partes review may only be based on prior art patents and printed publications; other types of art are excluded. 35 U.S.C. § 311(b). For a document to be a “printed publication” under 35 U.S.C. § 102, the document must be publicly accessible to persons concerned with the art to which the document relates. *In re Wyer*, 655 F.2d 221, 227 (C.C.P.A. 1981); *also SRI Int’l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008); *L-3 Comm’ns Holdings, Inc et al. v. Power Survey, LLC*, IPR2014-00832, Paper 9 at 11

(P.T.A.B. Nov. 14, 2014). A given reference is publicly accessible “upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.” *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378 (Fed. Cir. 2006); *SRI*, 511 F.3d at 1194.

Whether a reference was publicly accessible is a legal determination based on underlying factual issues, and is subject to a case-by-case analysis. *Wyer*, 655 F.2d at 224. Petitioner bears the burden of proving public accessibility. 37 C.F.R. § 42.20(c); *TRW Automotive US LLC v. Magna Elecs. Inc.*, IPR2015-00960, Paper 9 at 17–18 (P.T.A.B. Oct. 5, 2015); *B/E Aerospace, Inc. v. C & D Zodiac, Inc.*, 709 F. App’x 687, 698 (Fed. Cir. 2017). And that proof cannot be added during trial, but rather must be submitted with the Petition. *Temporal Power v. Beacon Power*, IPR2015-00146, Paper 12 at 4 (P.T.A.B. Jun. 10, 2015) (“It is undisputed that § 314(a) imposes a burden on Temporal to establish in its Petition a reasonable likelihood of success, which includes, among other things, making a threshold showing that the Lazarewicz PowerPoint is a printed publication within the meaning of § 102(b).”); *also Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 13-14 (P.T.A.B. Dec. 20, 2019) (precedential).

Here, Petitioner fails to produce sufficient proof that Ramos was publicly accessible before the critical date of the '654 patent (i.e., July 13, 2012). Petitioner provides only a single sentence to allegedly prove that Ramos qualifies as prior art: “Ramos ... is a paper published in the *Proceedings of the Fourth International Conference on Web Information Systems and Technologies* in 2008,” and is thus “prior art under at least pre-AIA §102(b).” Pet., 13. This is not an argument, but rather a conclusory statement not supported by evidence, and does not meet Petitioner’s burden to demonstrate that Ramos qualifies as prior art. Neither Petitioner, nor Petitioner’s expert provide any additional commentary on the alleged public availability of Ramos, let alone is any allegedly corroborating evidence cited. This single bare statement is insufficient to establish that Ramos was publicly available before July 13, 2012.

As Petitioner does not provide any explanation as to why it believes Ramos was published in 2008. Patent Owner and the Board are left to guess. As best as Patent Owner can tell, Petitioner appears to base its allegation on the mere fact that the year 2008 shows up twice in the five page Ramos reference. See EX1006, 197 (“P. Ramos B., N. G. J. Soares V. and J. P. D. Fonte A. (2008)”), 198, 200 (“WEBIST 2008 - International Conference on Web Information Systems and Technologies”). However, neither of these instances clearly, and sufficiently show that the reference was published or otherwise publicly available in 2008. Indeed, a

mere appearance of a date on a document does not establish that the document was available to or disseminated to the public on that date. *L-3 Comm 'ns*, IPR2014-00832, Paper 9 at 16-17 (finding that a document having the words “ca. 2002” does not show that it was publicly available in 2002).

Even if these two references to 2008 were interpreted as an alleged copyright date for Ramos, this would still be insufficient to prove public availability. To be sure, a copyright date on a document, absent any other showing, is similarly insufficient to show that the document was accessible to the public and qualifies as a printed publication. *TRW Automotive*, IPR2015-00960, Paper 9 at 18–19 (“The purpose of a copyright notice is, simply, to put a reader on notice that a claim has been made that the work is copyrighted”); *Hilgraeve, Inc. v. Symantec Corp.*, 271 F. Supp. 2d 964, 976 (E.D. Mich. 2003) (“[M]ere citation to the [copyright] date imprinted on a document, without more, is insufficient to establish that a product was known or used by others on that date.”); *iONROAD Ltd. v. Mobileye Tech. Ltd.*, IPR2013-00227, Paper 18 (P.T.A.B. Aug. 27, 2013). Thus, Ramos’ two references to 2008 are insufficient to definitively show that Ramos was publicly available in 2008, or at any point prior to July 13, 2012. *iONROAD Ltd.*, IPR2013-00227, Paper 18 at 3, 15-16.

Additional factors further call into question the accuracy of Petitioner’s allegation that Ramos was published in 2008. For example, Petitioner makes no

mention of how the document submitted as EX1006 (Ramos) was obtained. To the extent that this document was obtained recently, Petitioner provides no explanation as to why EX1006 is a true and correct copy of the version of the Ramos reference that was allegedly available in 2008.

Therefore, Petitioner fails to meet its burden to prove that Ramos qualifies as prior art. As such, Ground 3 and 4 in the Petition, each of which depend on Ramos qualifying as prior art, are fatally flawed and should be rejected by the Board.

IV. The Petition Fails to Establish a *Prima Facie* Case of Obviousness for the Combinations of References Presented in Grounds 1-4

In addition to the above, Grounds 1-4 are also deficient for failing to establish a *prima facie* case of obviousness for the combination of references presented in Grounds 1-4. Specifically, Petitioner fails to explain how or why a POSA would have implemented Huang's teachings in the **combination** of Phuah and TR-069 (Grounds 1 and 2), or in the **combined** teaching of Ramos, Werner, and Schran (Ground 4), and similarly fails to explain how or why a POSA would have implemented Schran's teachings in the **combination** of Ramos and Werner (Ground 3). Instead, in Grounds 1 and 2, Petitioner merely explains why it believes that Huang should be combined with Phuah alone, without any mention of TR-069 or the proposed modifications to Phuah based on the teachings of TR-069. Similarly, in Ground 4, Petitioner merely explains why it believes that Huang should be combined with Ramos alone, without any mention of Werner or Schran.

And in Ground 3, Petitioner merely explains why it believes that Schran should be combined with Ramos alone, without any mention of Werner. As such, Petitioner has failed to perform a proper motivation to combine analysis under *Graham* for all four of Petitioner's grounds. See *Graham v. John Deere co.*, 383 U.S. 1 (1966) ("*Graham*").

The three key factual inquiries set forth in *Graham* for establishing obviousness under 35 U.S.C. § 103(a) are: (1) determining the scope and content of the prior art, (2) ascertaining the differences between the prior art and the claims at issue, and (3) resolving the level of ordinary skill in the pertinent art. *Graham* at 17-18. These factual inquiries must be tied together by "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 at 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977 at 988 (Fed. Cir. 2006)).

Here, Petitioner's motivation to combine arguments, or lack thereof, run afoul of the bedrock principles set forth in *Graham*, including failing to set forth the differences between the art and the claims, as required by the second factual inquiry under *Graham*. The second *Graham* factor necessarily involves an analysis of what the references and claims teach, and what is missing, and "requires a comparison of the properly construed claim to the prior art." *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325 at 1332 (Fed. Cir. 2010). When Petitioner seeks to

rely on a three reference combination (References A, B, and C, for example), the second *Graham* factor requires an analysis of what is missing from the **combination** of References A and B compared to the claims before determining whether a motivation exists to add Reference C to that existing combination. *See, e.g., Palo Alto Networks, Inc. v. Centripetal Networks, LLC*, 122 F.4th 1378, 1386 (Fed. Cir. 2024) *citing* *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (holding that when analyzing a proposed combination of references, the references sought to be combined “must be read together, not in isolation.”).

If a proposed ground of invalidity fails to identify the differences between the existing **combination** of prior art references (e.g., combination of References A and B) and the claimed invention, then such a ground has necessarily failed to establish a *prima facie* case of obviousness, and the petition should be denied. *Id.*; *see also Apple, Inc. v. ContentGuard Holdings, Inc.*, IPR2015-00355, Paper 9 at 9 (P.T.A.B June 26, 2015) (“*Apple*”) (finding no reasonable likelihood of prevailing because “the Petition does not identify sufficiently the differences between the claimed invention and the prior art, or how the prior art teachings are to be modified or combined, if at all.”). Each of Grounds 1-4 of the Petition fail in this respect.

In Grounds 1 and 2, Petitioner relies on a combination of three references—Phuah, TR-069, and Huang. In explaining its alleged motivations for combining

Phuah, TR-069, and Huang, Petitioner first addresses the proposed combination of Phuah and TR-069. Petitioner alleges that TR-069 “expressly provides for the download of software from a server to CPE,” and that TR-069’s software download teachings could be applied to Phuah. Pet., 19. After addressing the proposed combination of Phuah and TR-069, Petitioner turns to Huang. Petitioner alleges that “[a] POSITA would have been motivated to apply Huang’s throughput and latency data collection teachings to Phuah to ensure sufficient information was being gathered regarding LAN and WAN conditions, as Phuah desires ...” Pet., 28. Petitioner also alleges that “[a] POSITA would have been motivated and found it obvious to include Huang’s [measuring object tools] MTOs in the Phuah system.” Pet., 43. However, nowhere in its discussion of the alleged motivations to combine Huang with Phuah does Petitioner ever once mention TR-069, or the proposed modifications to Phuah based on the teachings of TR-069. As such, Grounds 1 and 2 fail to set forth the differences between the **combination** of Phuah and TR-069, and the claims, as required by the second factual inquiry under *Graham*. *Enzo Biochem*, 599 F.3d 1325 at 1332.

Ground 4 of the Petition is deficient for similar reasons. In Ground 4, Petitioner relies on a combination of four references—Ramos, Werner, Schran, and Huang. In explaining its alleged motivation for combining these references, Petitioner first addresses Ramos, Werner, and Schran, and lays out its alleged

motivations for combining these three references in Ground 3. *See* Pet., 53-60.

Subsequently in Ground 4, Petitioner presents its alleged motivations for combining Huang. Specifically, and similar to its arguments relating to Grounds 1 and 2 (discussed above), Petitioner alleges that “[a] POSITA would have been motivated and found it obvious to include Huang’s MTOs in the Ramos’s system.” Pet., 76. However, nowhere in its discussion of the alleged motivations to combine Huang with Ramos does Petitioner ever once mention Werner, Schran, or the proposed modifications to Ramos based on the teachings of Werner and Schran. *See* Pet., 56 (discussing “applying Werner’s LAN teachings to Ramos”), 57 (discussing “implementing Werner’s analyzer teachings with Ramos”), 58-59 (discussing combining Schran’s “system for modifying network configuration settings on a client machine using an application program on the client that monitors network performance” with Ramos). As such, Ground 4 fails to set forth the differences between the **combination** of Ramos, Werner, and Schran, and the claims, as required by the second factual inquiry under *Graham*. *Enzo Biochem*, 599 F.3d 1325 at 1332.

Ground 3 is similarly flawed. In Ground 3, Petitioner relies on a combination of three references—Ramos, Werner, and Schran. In explaining its alleged motivation for combining these references, Petitioner first addresses the proposed combination of Ramos and Werner. *See* Pet., 56 (discussing “applying

Werner’s LAN teachings to Ramos”), 57 (discussing “implementing Werner’s analyzer teachings with Ramos”). After addressing the proposed combination of Ramos and Werner, Petitioner then turns to Schran. Petitioner alleges that Schran discloses a “system for modifying network configuration settings on a client machine using an application program on the client that monitors network performance,” and that “[a] POSITA would have been motivated and found it obvious to combine Schran’s teachings with Ramos.” Pet., 58-59. However, nowhere in its discussion of the alleged motivations to combine Schran with Ramos does Petitioner ever once mention Werner, or the proposed modifications to Ramos based on the teachings of Werner. As such, Ground 3 fails to set forth the differences between the **combination** of Ramos and Werner, and the claims, as required by the second factual inquiry under *Graham. Enzo Biochem*, 599 F.3d 1325 at 1332.

As illustrated above, the Petition fails to properly explain how or why a POSA would have implemented Huang’s teachings in the **combination** of Phuah and TR-069 (Grounds 1 and 2), or in the **combined** teaching of Ramos, Werner, and Schran (Ground 4), and how or why a POSA would have implemented Schran’s teachings in the **combination** of Ramos and Werner (Ground 3). As such, Petitioner has also necessarily failed under a 35 U.S.C. § 103 analysis to identify **what is missing from the combined systems** of: Phuah and TR-069 (Grounds 1

and 2); Ramos, Werner, and Schran (Ground 4); and Ramos and Werner (Ground 3). *See Apple*, 9.

Therefore, the Board should deny institution of the Petition for failing to satisfy at least the second factual inquiry under *Graham*. *Enzo Biochem*, 599 F.3d 1325 at 1332.

V. The '654 Patent Technology

The four grounds raised in the Petition are also deficient for multiple substantive reasons, each of which also warrants denial of the Petition. But before Patent Owner addresses these substantive deficiencies for Grounds 1-4, a brief discussion of the '654 patent, its innovations, and the benefits provided by those innovations is in order.

A. Background that led to the '654 patent

The inventors of the '654 patent understood that there was a desire in the industry at the time for a system that could collect wide area network (WAN) performance information from the local area network (LAN) side, as doing so could provide additional visibility into network issues. Such visibility would have been valuable for the diagnosis of both LAN-related and WAN-related problems. However, prior to the '654 patent, service providers were generally unable to access the LAN side of their customers' networks, and therefore they were generally unable to collect WAN performance statistics from the LAN side.

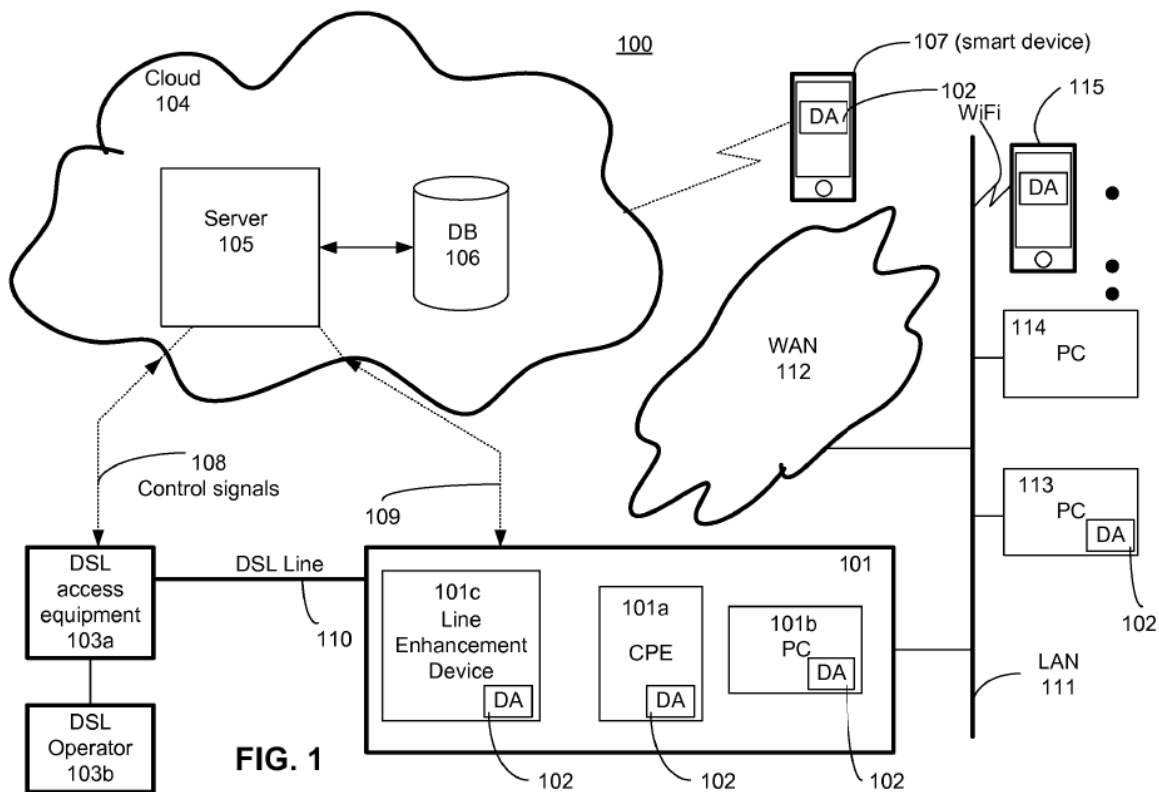
Additionally, in traditional practice prior to the '654 patent, WAN and/or LAN performance information, such as topological information, geographical information, user's network usage pattern, quality of network connection, time, throughput, etc., were not centrally analyzed. EX1001, 1:28-34. Accordingly, communication devices coupled to such networks had no means for knowing performance data that could be used to intelligently assess and manage performance. *Id.*, 1:34-41. Therefore, communication devices at the time would often "operate with lower performance than otherwise possible." *Id.*

B. Innovations of the '654 patent

The '654 patent specification discloses multiple innovations related to collecting and analyzing WAN and/or LAN performance information centrally, making analysis result available to the end user, and enhancing the performance of communication devices coupled to the networks. *Id.*, 2:36-38, 2:48-61, 3:13-24. In particular, the claims of the '654 patent are directed to a method (claims 1-17), and a system (claims 18-36) that collect WAN performance information from computing devices, analyze the WAN performance information to generate an analysis result in a central server, report the analysis result, and receive by the central server an on-demand change request associated with throughput, or latency.

The systems and methods disclosed in the '654 patent address and solve the problem of enhancing the performance of communication devices by collecting

WAN and/or LAN performance information by a downloadable agent (DA) executed on a communication device. The DA transmits the collected information to a server for analysis, receives an analysis report, and sends an on-demand change request to the server to improve performance. *Id.*, 2:31-42, 2:58-3:2, 8:61-67. Figure 1 of the '654 patent (reproduced below) illustrates an exemplary system with communication devices having a downloadable agent to “assist with performance analysis.” *Id.*, 4:28-31.



EX1001, FIG. 1.

Figure 1 illustrates that a communication network 100 comprises a LAN 101 (or LAN 111), a WAN 112, and a server 105 that resides in a cloud 104. *Id.*, 4:31-34, 4:45-47. The DA 102 associated with a communication device “collects data locally” and “sends the collected data to the server 105.” *Id.*, 5:59-64. The server 105 receives data (e.g., WAN performance information) and performs “complex analysis (e.g., statistical).” *Id.*, 4:55-58, 5:50-55. The server 105 then “generate[s] an analysis result” by analyzing the WAN performance information, for example, computing throughput of a communication link, and “report[s] the analysis result to at least one of the broadband subscriber and the broadband subscriber’s service provider.” *See id.*, 7:23-34, 8:43-45. The DA 102 reviews the analysis report generated by the server 105 and sends an on-demand change request to the server 105. *See id.*, 5:46-49, 8:61-67.

Importantly, the ’654 patent’s exemplary system improves upon traditional network system by performing comprehensive analysis of WAN and/or LAN performance information centrally, providing analysis results to at least one of the broadband subscriber and the broadband subscriber’s service provider, and enhancing the performance of the communication devices coupled to the networks through on-demand change requests. *See, e.g., id.*, 2:36-38, 2:48-61, 3:13-24.

Specifically, the ’654 patent describes that the server 105 can be a “cloud or WAN-based server.” *Id.*, 2:34-36. The server generates an analysis result based on

“statistical analysis” and the analysis result includes “throughput.” *See, e.g., id.*, 3:40-50, 7:28-31, 8:43-49, 11:35-40. For example, the server is operable to “generate analysis result by computing throughput of DSL connection 110 by collecting current performance metrics associated with DSL service,” or performing “statistical analysis” to generate a throughput result “based on information received from the DA 102 and other information.” *Id.*, 7:23-48, 8:45-49.

The ’654 patent also describes that analysis result can be used to “enhance the performance of the communication device.” *Id.*, 2:59-61. For example, the server 105 reports the analysis result “by sending availability of higher bandwidth for operating a DSL service” to a DA associated with a communication device, and receives “an on-demand change request” from the DA to “acquire higher throughput.” *Id.*, 8:49-67. The server 105 receives the “on-demand change request” and determines “if the on-demand request” can be met based on the analysis of available data. *Id.*, 8:61-5.

As such, the ’654 patent discloses novel and non-obvious systems and methods that improved upon traditional techniques preceding the ’654 patent by analyzing network performance data centrally and enhanced the performance of the communication devices coupled to the network based on the analysis. *See, e.g., id.*, 1:28-41, 2:36-38, 2:48-61, 3:13-24.

VI. Person of Ordinary Skill in the Art

For purposes of this Preliminary Response, Patent Owner applies Petitioner's level of skill for a person of ordinary skill in the art ("POSA"). Pet., 10.

VII. Claim Construction

For purposes of this Preliminary Response, Patent Owner agrees with Petitioner that the claims should be given their ordinary and customary meanings. See Pet., 10. Patent Owner reserves the right to contest Petitioner's implicit or explicit constructions during the proceeding.

VIII. The Combination of Phuah, TR-069, and Huang in Grounds 1 and 2 Fails to Disclose All of the Features of the Challenged Claims

The Board should also not institute trial based on Grounds 1 and 2 because Petitioner did not establish a reasonable likelihood that the combination of Phuah, TR-069, and Huang renders any of the challenged claims obvious. Petitioner's Grounds 1 and 2 fail for at least the following reasons:

1. The combination of Phuah, TR-069, and Huang fails to disclose, or render obvious, "*transmitting the WAN performance information to a machine, wherein the machine is operable to: store the WAN performance information in a database associated with the machine,*" as recited in independent claim 1 (and similarly recited in independent claim 18);
2. The combination of Phuah, TR-069, and Huang fails to disclose, or render obvious, "*the analysis result comprises at least throughput,*"

as also recited in independent claim 1 (and similarly recited in independent claim 18); and

3. The combination of Phuah, TR-069, and Huang fails to disclose, or render obvious, “*wherein the server is operable to receive an on-demand change request associated with at least one of: throughput, or latency,*” as recited in independent claim 18.

- A. **The combination of Phuah, TR-069, and Huang fails to disclose, or render obvious, “*transmitting the WAN performance information to a machine, wherein the machine is operable to: store the WAN performance information in a database associated with the machine,*” as recited in independent claim 1 (and similarly recited in independent claim 18)**

Petitioner fails to show that the applied references disclose, or render obvious, “*transmitting the WAN performance information to a machine, wherein the machine is operable to: store the WAN performance information in a database associated with the machine,*” as recited in independent claim 1. The Petition solely relies on Phuah to allegedly disclose these claim features. See Pet., 22-23. However, Petitioner’s arguments relating to these claim features fail for at least the following reason: the data in Phuah that Petitioner alleges to be the claimed “*WAN performance information*” (i.e., Phuah’s raw data used to perform diagnostic testing) is neither “*transmit[ed]*” to Phuah’s alleged machine (network element 106), nor “*store[d]*” in a database associated with the alleged machine.

As an initial matter, in its discussion of claim element [1.1]³ (“*collecting WAN performance information*”), Petitioner alleges that Phuah’s raw data used to perform diagnostic testing is the claimed “*collect[ed] WAN performance information.*” See Pet., 20 (“A POSITA would have recognized that **such [diagnostic] tests disclose ‘collecting WAN performance information’** ... For instance, **performing diagnostic testing** to ensure ‘that a WAN interface transmission rate meets a specified threshold’ **discloses collecting information** relating to at least ‘network throughput’ and connectivity to a POSITA.”).⁴ Indeed, Petitioner appears to take the position that before Phuah’s system can run any diagnostic tests on its WAN, Phuah’s Mod-122 must first collect raw WAN data, and that it’s this collected raw WAN data that allegedly discloses the claimed “*collect[ed] WAN performance information.*” See *id.* Stated another way, Petitioner alleges that the act of “testing” in Phuah equates to the claimed “*collecting,*” in which case, what is being collected as part of this testing is the “raw WAN data.”

Petitioner’s expert, Dr. Houh, appears to reinforce this understanding in his

³ For ease of reference, Patent Owner refers to elements of the challenged claims using Petitioner’s labeling in the Petition.

⁴ Emphasis added unless otherwise noted.

declaration. Indeed, Dr. Houh states that in order to perform diagnostic tests, Phuah's module 122 "would collect WAN information" including for example "whether pings to a default gateway or DNS server fail." EX1003, ¶99. A POSA would have understood that this collected ping information represents raw WAN data, which can then subsequently be used to perform diagnostic tests.

Indeed, once the raw WAN data is collected (e.g., collected ping information), Phuah discloses that diagnostic tests can then be performed using the collected raw WAN data. EX1004, ¶¶[0026]-[0027]. The results of Phuah's diagnostics tests can then be used to verify a number of different WAN operational characteristics. *See* Pet., 20 *citing* EX1004, ¶[0027] (using Phuah's diagnostic test results to "ensure that a connected residential gateway has a single WAN interface active," to "verify that a WAN interface transmission rate meets a specified threshold," and to "verify that errors of a WAN Ethernet port are below a specified threshold").

Therefore, Petitioner, Dr. Hough, and Phuah all agree that Phuah's collected raw WAN data (e.g., collected ping information) is separate and distinct, and serves a different purpose than Phuah's diagnostic test results.⁵ And it is the

⁵ The '654 patent also discloses that "raw data" is different from "process[ed]" raw data. *See, e.g.*, EX1001, 13:3-9.

collected raw WAN data that both Petitioner and Dr. Houh allege to be the claimed “collect[ed] WAN performance information.”

When this understanding is applied to claim elements [1.4] and [1.5.1], it becomes clear that Phuah’s collected raw WAN data (the alleged “collect[ed] WAN performance information”) is neither “transmit[ed]” to Phuah’s alleged machine (network element 106), nor “store[d]” in a database associated with the alleged machine. Indeed, Petitioner is clear that what Phuah actually transmits to network element 106, and subsequently stores, are “diagnostic test results,” and not the collected raw WAN data (e.g., collected ping information). See Pet., 22 citing EX1004, ¶[0023] (“Network element 106 may receive or query **diagnostic test results** ... Network element 106 may store **diagnostic test results** locally or remotely such as on data storage 108”), ¶[0028] (“Module 122 may transmit **diagnostic test results** or provide an interface to **diagnostic test results**. For example, module 122 may transmit **diagnostic test results** to network element 106 or be queried by network element 106.”).

Therefore, under Petitioner’s own mapping, the combination of Phuah, TR-069, and Huang does not disclose, or render obvious, “transmitting the WAN performance information to a machine, wherein the machine is operable to: store the WAN performance information in a database associated with the machine,” as recited in independent claim 1 (and similarly recited in independent claim 18). For

at least these reasons, independent claims 1 and 18 are patentable over the combination of Phuah, TR-069, and Huang. Dependent claims 2-17 and 19-36 are likewise patentable at least for their dependencies from the independent claims.

B. The combination of Phuah, TR-069, and Huang fails to disclose, or render obvious, “*the analysis result comprises at least throughput*,” as recited in independent claim 1 (and similarly recited in independent claim 18)

Petitioner fails to show that the applied references disclose, or render obvious, “*the analysis result comprises at least throughput*,” as recited in independent claim 1. The Petition presents two theories for how the applied references allegedly disclose this claim feature—a first theory where Phuah alone discloses both the claimed “*analysis result*” and the “*throughput*” comprised therein, and a second theory where Phuah discloses only the “*analysis result*” and Huang discloses the “*throughput*.” See Pet., 24-28. Both of Petitioner’s theories fail.

First, Petitioner alleges that Phuah’s “corrective actions” are the claimed “*analysis result*.” See Pet., 26 (“FIGs. 4-9 illustrate various ‘exemplary screen diagram[s] of a system for performing residential gateway diagnostics and **corrective actions,**’ which a POSITA would understand as being a result of an **analysis done by Phuah’s management system.**”) Indeed, in its discussion of claim element [1.5.3] (“*report the analysis result to at least one of the broadband subscriber and the broadband subscriber’s service provider*”), Petitioner alleges

that Phuah’s “corrective actions” are the claimed “*analysis result*” that are reported to broadband subscribers and service providers. *See* Pet., 29 (“NE106 [] **reports analysis results to broadband subscribers and service providers through ‘corrective actions,’** which NE106 initiates via Mod-122”).⁶

However, Phuah’s “corrective actions” (the alleged “*analysis result*”) do not “*comprises at least throughput,*” as required by independent claim 1. Instead, Phuah makes clear that its “corrective actions” merely include one or more of: (i) “resetting a network interface of network access equipment such as a residential gateway or broadband home router;” (ii) “rebooting a residential gateway, and resetting one or more parameters of the residential gateway to a default setting (e.g., a factory setting); and (iii) “providing a user interface to a user of the network access equipment.” EX1004, ¶¶[0029]-[0030]. Sending an indication to a

⁶ To the extent that Petitioner’s arguments are interpreted as arguing for anything other than Phuah’s “corrective actions” being the claimed “*analysis result*,” such an interpretation would render Petitioner’s arguments against claim element [1.5.3] deficient. Indeed, Petitioner has not shown how any other data, besides the “corrective actions,” is reported to Phuah’s broadband subscribers and service providers. *See* Pet., 29-31.

broadband subscriber or service provider to perform a reset or reboot action does not convey any throughput information. Providing a user interface to network access equipment similarly does not convey any throughput information to a user of the equipment. Therefore, Petitioner's first theory that Phuah alone discloses both the claimed "*analysis result*" and the "*throughput*" comprised therein fails.⁷

Petitioner's second theory similarly fails as the addition of Huang does not cure the deficiencies of Phuah. With respect to the combination of Phuah and

⁷ Petitioner's allegation that "Phuah's Mod-122 generates test results to ensure 'that a WAN interface transmission rate meets a specified threshold' and that the tests may include 'a WAN IP connectivity test and a WAN interface bandwidth test'" is of no consequence. See Pet., 27. Indeed, as Petitioner admits, this functionality relates to Phuah's diagnostic tests using the collected raw WAN data, and does not relate to the contents of Phuah's "corrective actions" (the alleged "*analysis result*"). Moreover, Phuah's WAN interface transmission rate is not equivalent to the throughput of Phuah's network. While the WAN interface transmission rate may represent an upper bound on the network throughput, this is insufficient to disclose the claimed "*analysis result comprises at least throughput.*"

Huang, Petitioner merely alleges that:

Huang's throughput and latency data collection teachings [could be applied] to Phuah to ensure sufficient information was being gathered regarding LAN and WAN conditions, as Phuah desires, (Ex-1004-Phuah at 0026-29), which enables broadband subscribers and service providers to make informed decisions regarding "corrective actions," as discussed below regarding limitations 1.5.3 and 1.6.

Pet., 28. Thus, as Petitioner acknowledges above, even if Huang's throughput and latency data collection teachings were implemented in Phuah, this would not change the fact that the information being conveyed to Phuah's broadband subscribers and service providers would be in the form of Phuah's "corrective actions." And as discussed above, such "corrective actions" (the alleged "*analysis result*") do not "*comprises at least throughput*," as required by independent claim 1.

Therefore, the combination of Phuah, TR-069, and Huang does not disclose, or render obvious, "*the analysis result comprises at least throughput*," as recited in independent claim 1 (and similarly recited in independent claim 18). For at least these reasons, independent claims 1 and 18 are patentable over the combination of Phuah, TR-069, and Huang. Dependent claims 2-17 and 19-36 are likewise patentable at least for their dependencies from the independent claims.

C. The combination of Phuah, TR-069, and Huang fails to disclose, or render obvious, “wherein the server is operable to receive an on-demand change request associated with at least one of: throughput, or latency,” as recited in independent claim 18

Petitioner fails to show that the applied references disclose, or render obvious, “wherein the server is operable to receive an on-demand change request associated with at least one of: throughput, or latency,” as recited in independent claim 18. The Petition solely relies on Phuah to allegedly disclose this claim feature. *See* Pet., 31-33.⁸ However, Petitioner’s arguments relating to this claim feature fail for multiple reasons.

Before addressing each of the deficiencies in Petitioner’s arguments, it is important to understand how the ’654 patent describes the claimed “on-demand change request”:

In one embodiment, the **server 105 is operable to receive an on-demand change request**. In one embodiment, the on-demand change is associated with at least one of: throughput, latency, packet loss, or jitter. For example, **DA 102 of the PC 101b sends a request via connection 109 to the server 105** to acquire higher throughput than current throughput for its DSL line 110. In such an embodiment, the

⁸ Patent Owner addresses Petitioner’s arguments for this claim feature within the context of independent claim 1, because Petitioner’s arguments for claim 18 merely refer back to Petitioner’s claim 1 arguments. *See* Pet., 41.

server 105 performs analysis based on available data in the database 106 and determines if the on-demand request by the PC 102c can be met. If it can be met, a report is provided to the DA 102 by the server 105 with information (e.g., cost etc) about how to improve throughput.

EX1001, 8:61-9:5. Petitioner also relies on this same disclosure from the '654 patent to provide the necessary context for the claimed "*on-demand change request*." See Pet., 31 (describing this disclosure as the '654 patent's "single example of an 'on-demand change request[])"). When independent claim 18 is read in the context of this passage, a POSA would have understood that the claimed "*on-demand change request*" must be sent to a specific server. Phuah fails to disclose this feature.

First, Petitioner alleges that the corrective actions performed by Phuah's Mod-122 are the claimed "*on-demand change request*." Pet., 31-32 (alleging that "Phuah also discloses executing corrective actions (on-demand change requests)"). Phuah's Mod-122 can perform corrective actions in one of two different ways: "network element 106 may ... initiate the execution of ... corrective actions by module 122" or "[m]odule 122 may be capable of ... performing corrective actions independently of network element 106 and independent of a status of network connectivity for network element 114." EX1004, ¶[0023]. Whether the corrective action is performed by Mod-122 independently or as a result of a request from

network element 106, the result is the same—i.e., Mod-122 does not send these corrective actions to “*the server*,” as required by independent claim 18, and as similarly explained in the specification of the ’654 patent. See EX1001, 8:61-9:5.

Indeed, independent claim 18 recites “*wherein the server is operable to receive an on-demand change request ...*” Independent claim 18 also recites that the server that receives the on-demand change request is the same server that: (i) “*receive[s] WAN performance information;*” (ii) “*store[s] the WAN performance information in the database associated with the server;*” (iii) “*analyze[s] the WAN performance information to generate an analysis result;*” and (iv) “*report[s] the analysis result to at least one of the broadband subscriber and the broadband subscriber’s service provider.*” Conversely, the corrective actions performed by Phuah’s Mod-122 (the alleged “*on-demand change request*”) are not sent to or received by network 106 (the alleged “*server*”). Instead, Phuah discloses that Mod-122 either “*perform[s] corrective actions independently of network element 106,*” or “*network element 106 ... initiate[s] the execution of ... corrective actions by module 122.*” EX1004, ¶23. In neither scenario does Mod-122 send the corrective actions (the alleged “*on-demand change request*”) to network 106 (the alleged “*server*”).

Therefore, the combination of Phuah, TR-069, and Huang does not disclose, or render obvious, “*wherein the server is operable to receive an on-demand*

change request associated with at least one of: throughput, or latency,” as recited in independent claim 18. For at least these reasons, independent claim 18 is patentable over the combination of Phuah, TR-069, and Huang. Dependent claims 19-36 are likewise patentable at least for their dependencies from independent claim 18.

D. The identified deficiencies also apply to independent claim 1

The above deficiency, although discussed with respect to independent claim 18, applies with equal force to independent claim 1 of the '654 patent. While independent claim 1 recites “*sending an on-demand change request*” and does not include a step for receiving the on-demand change request similar to the feature recited in independent claim 18 (i.e., “*wherein the server is operable to receive an on-demand change request*”), the claimed “*on-demand change request*” recited in independent claim 1 must be read consistently with independent claim 18 and with the specification of the '654 patent. Indeed, as discussed above, the specification of the '654 patent exclusively discloses that the on-demand change request is sent to and received by server 105, which “performs analysis based on available data in the database [] and determines if the on-demand request ... can be met,” and “[i]f it can be met, a report is provided ... by the server 105 with information (e.g., cost etc.) about how to improve throughput.” EX1001, 8:67-9:5. This is consistent with the functionality recited in independent claim 1.

Independent claim 1 should therefore be interpreted consistently with independent claim 18 and with the specification of the '654 patent. When doing so, the above deficiencies discussed with respect to independent claim 18 should apply with equal force to independent claim 1, as well as dependent claims 2-17.⁹

IX. The Combinations of References in Grounds 3 and 4 Fail to Disclose All of the Features of the Challenged Claims

The Board should also not institute trial on Grounds 3 and 4 because Petitioner did not establish a reasonable likelihood that the combination of Ramos, Werner, and Schran (Ground 3), or the combination of Ramos, Werner, Schran, and Huang (Ground 4) render the challenged claims obvious. Indeed, Petitioner's Grounds 3 and 4 are deficient at least because the combination of Ramos, Werner, and Schran (with or without the addition of Huang) fails to disclose, or render obvious, "*wherein the server is operable to receive an on-demand change request associated with at least one of: throughput, or latency,*" as recited in independent

⁹ As discussed above, Petitioner also seemingly believes that independent claims 1 and 18 should be analyzed together as the Petition does not present any standalone analysis for independent claim 18 with respect to the claimed "*on-demand change request,*" and instead merely refers back to the analysis of independent claim 1. Pet., 41.

claim 18.

- A. The combination of Ramos, Werner, and Schran (with or without the addition of Huang) fails to disclose, or render obvious, “wherein the server is operable to receive an on-demand change request associated with at least one of: throughput, or latency,” as recited in independent claim 18**

Petitioner fails to show that the applied references disclose, or render obvious, “wherein the server is operable to receive an on-demand change request associated with at least one of: throughput, or latency,” as recited in independent claim 18. The Petition relies only on Ramos and Werner to allegedly disclose this claim feature. See Pet., 31-33.¹⁰ However, Petitioner’s arguments relating to this claim feature fail.

As mentioned previously, both independent claim 18 and the specification of the ’654 patent provide that the claimed “on-demand change request” must be sent to a specific server. See EX1001, 8:61-9:5. Specifically, independent claim 18 recites “wherein the server is operable to receive an on-demand change request ...,” and also recites that this server is the same server that: (i) “receive[s] WAN performance information;” (ii) “store[s] the WAN performance information in the

¹⁰ Patent Owner again addresses Petitioner’s arguments for this claim feature within the context of independent claim 1, because Petitioner’s arguments for claim 18 merely refer back to Petitioner’s claim 1 arguments. See Pet., 74.

database associated with the server;” (iii) *“analyze[s] the WAN performance information to generate an analysis result;”* and (iv) *“report[s] the analysis result to at least one of the broadband subscriber and the broadband subscriber’s service provider.”* Conversely, the feature in combined system of Ramos and Werner that Petitioner alleges to be the claimed *“on-demand change request”* (Werner’s techniques for *“request[ing] any one or more desired capacity ... and/or change in capacity”*) is not sent to/received by *“the server,”* as required by independent claim 18. See Pet., 69.

First, Petitioner alleges that Ramos’ IAQM Server is the claimed *“server.”* See Pet., 63 (*“The IAQM Server of Ramos discloses the claimed machine”*), 74 (*“the ‘machine’ described with respect to limitations 1.5.1 through 1.6 is a ‘server’”*). However, even if Werner’s techniques for *“request[ing] any one or more desired capacity ... and/or change in capacity”* were implemented in Ramos, such requests would not be sent to or received by Ramos’ IAQM Server. In fact, Petitioner recognizes as much during its discussion of its alleged motivation to combine Ramos and Werner: **“It was also straightforward for a Ramos service provider (ISP) to receive change in capacity requests** from the IAQM system.” Pet., 57-58. A POSA would have understood that Ramos’ ISP server is not the same as Ramos’ IAQM Server. It is therefore not surprising that Petitioner does not mention anywhere in its analysis of independent claim 1 or 18 what network

element in the proposed Ramos-Werner combination would actually “*receive an on-demand change request*,” as required by independent claim 18. See Pet., 69, 74.

Therefore, the combination of Ramos, Werner, and Schran (with or without the addition of Huang) does not disclose, or render obvious, “*wherein the server is operable to receive an on-demand change request associated with at least one of: throughput, or latency*,” as recited in independent claim 18. For at least these reasons, independent claim 18 is patentable over the combination of Ramos, Werner, and Schran (Ground 3) as well as the combination of Ramos, Werner, Scharan, and Huang (Ground 4). Dependent claims 19-36 are likewise patentable at least for their dependencies from independent claim 18.

B. The identified deficiencies also apply to independent claim 1

The above deficiencies, although discussed with respect to independent claim 18, should apply with equal force to independent claim 1 of the '654 patent. While independent claim 1 recites “*sending an on-demand change request*” and does not include a step for receiving the on-demand change request similar to the feature recited in independent claim 18 (i.e., “*wherein the server is operable to receive an on-demand change request*”), the claimed “*on-demand change request*” recited in independent claim 1 should still be read consistently with independent claim 18 and with the specification of the '654 patent. Indeed, as discussed above, the specification of the '654 patent exclusively discloses that the on-demand

change request is sent to and received by server 105, which “performs analysis based on available data in the database [] and determines if the on-demand request ... can be met,” and “[i]f it can be met, a report is provided ... by the server 105 with information (e.g., cost etc) about how to improve throughput.” EX1001, 8:67-9:5. This is consistent with the functionality recited in independent claim 1.

Independent claim 1 should therefore be interpreted consistently with independent claim 18 and with the specification of the '654 patent. When doing so, the above deficiencies discussed with respect to independent claim 18 should apply with equal force to independent claim 1, as well as dependent claims 2-17.¹¹

X. Even if Petitioner Fails to Meet Its Burden For Less Than All of the Challenged Claims and/or Proposed Grounds, the Board Should Still Deny the Petition

As explained herein, Patent Owner has identified a plethora of deficiencies in Petitioner’s arguments, each of which should prove fatal to the Petition. Nonetheless, should the Board ultimately determine that Petitioner met its burden

¹¹ As discussed above, Petitioner also seemingly believes that independent claims 1 and 18 should be analyzed together as the Petition does not present any standalone analysis for independent claim 18 with respect to the claimed “*on-demand change request*,” and instead merely refers back to the analysis of independent claim 1. Pet., 74.

for some claims, but has failed to meet its burden of establishing unpatentability for fewer than all of the challenged claims of the '654 patent, the Petition should still be denied in order to conserve the Board's valuable time and resources. *See e.g., Chevron Oronite Co. v. Infineum USA L.P.*, Case IPR2018-00923, Paper 9 at 10–11 (P.T.A.B. Nov. 7, 2018). The same holds true should the Board ultimately determine that Petitioner met its burden for one, but not both of its proposed invalidity grounds.

Pursuant to 35 U.S.C. § 314(a), an *inter partes* review may not be instituted “unless ... the information presented in the petition ... and any response ... shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” But even when a petitioner demonstrates a reasonable likelihood of prevailing with respect to one or more claims, institution of review remains discretionary. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) (“[Section] 314(a) invests the Director with discretion on the question whether to institute review” (emphasis omitted)); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”). 35 U.S.C. § 316(b) also provides that, when determining whether to exercise its discretion, the Board should consider the effect of any regulations on “the efficient administration of the Office [and] the ability of the Office to timely complete proceedings.”

Additionally, 37 C.F.R. § 42.1(b) provides that the Board should also take into account the requirement to construe the rules to “secure the just, speedy, and inexpensive resolution of every proceeding.” Office guidance, published November 20, 2019, also explains that the Board may consider the number of claims and grounds that meet and do not meet the reasonable likelihood standard when deciding whether to institute *inter partes* review under 35 U.S.C. § 314(a). Patent Trial and Appeal Board Consolidated Trial Practice Guide November 2019, p. 64 (Nov. 20, 2019), available at <https://www.uspto.gov/TrialPracticeGuideConsolidated> (“2019 Office Guidance”) (“[T]he panel will evaluate all the challenges and determine whether, in the interests of efficient administration of the Office and integrity of the patent system, the entire petition should be denied.”).

Here, should the Board determine that Petitioner has failed to meet its burden of establishing unpatentability for some but fewer than all of the challenged claims of the ’654 patent (*see, e.g.*, Sections III, VIII, and IX), the Petition should still be denied in order to conserve the Board’s valuable time and resources. *See Deeper, UAB. v. Vexilar, Inc.*, IPR2018-01310, Paper 7 at 43 (P.T.A.B. Jan. 24, 2019) (finding that because Petitioner only demonstrated a reasonable likelihood of prevailing with respect to a subset of the 23 challenged claims, “instituting a trial with respect to all twenty-three claims ... would not be an efficient use of the

Board's time and resources."'). Similarly, should the Board determine that Petitioner has failed to meet its burden of establishing unpatentability for some but not all grounds, the Petition should again be denied in order to conserve the Board's valuable time and resources. *See* 2019 Office Guidance, p. 64; 35 U.S.C. § 316(b); 37 C.F.R. § 42.1(b).

XI. Conclusion

The Board should not institute trial on either of the grounds set forth in the Petition because Petitioner has not established that the asserted references, either alone or in combination, render obvious the challenged claims of the '654 patent.

Respectfully submitted,

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CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE**, has 9,976 words, in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24. This word count was prepared using Microsoft Word 2016.

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CERTIFICATION OF SERVICE

The undersigned hereby certifies that the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE**, and Exhibits 2001-2004 were served electronically in their entireties on March 17, 2025, upon the following parties by email:

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